Lente (F.D.)

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AND

THEIR SURGICAL TREATMENT.

BY

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NEURALGIA AND OTHER NEUROSES

ARISING FROM CICATRICES OF THE SCALP,

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By FREDERICK D. LENTE, M.D.

The attention of the writer was first called to the effect of cicatrices of the scalp by a case which fell under his care while resident surgeon of the New-York Hospital in 1850, which was published, with remarks, in the July, 1862, number of the *American Journal of the Medical Sciences*, and later, by a case which fell under his care in 1870, the details of which he will now proceed to relate.

Case.—Miss M. M., a young lady in the enjoyment of a sound constitution and good health, was thrown down a rocky precipice from a carriage in July, 1870, by which accident she received numerous cuts and bruises, the most important wound being on the scalp. When I saw her a couple of weeks after the accident, she presented a scar on the left side of the forehead, about half an inch in length and somewhat irregular, and one straight cicatrix nearly two inches in length, and about a line in breadth, about an inch and a half above the left ear, and in front of it. The wounds had healed with great rapidity, and the cicatrices were not tender.

For some months, she experienced no ill effects from these; but, during the succeeding winter, she felt twinges of sharp pain shooting over the left side of the forehead, and the larger cicatrix became painful. Gradually the pains increased, and she had, in addition, a feeling as if a heavy weight was pressing on the top of the head, and weighing her down. The pain

became constant, and very severe; but she bore it with great fortitude until the latter end of the spring of 1871, when she called on the writer at his office in the city, to ask relief. Excision was advised as the only chance for cure; and, as she requested some temporary means of relief while she and her parents were coming to a conclusion regarding the operation, an ointment of aconitine was prescribed. During the summer, the patient sent for the writer, and stated that she was willing to submit to any treatment, as her suffering was incessant and almost intolerable; the sensation as of weight on top of the head was particularly distressing.

The trouble evidently originated in the upper cicatrix, as she felt that the pain always radiated from that point, and pressure upon it produced considerable distress, and an increase in the shooting pains. She stated that she had consulted Professor Willard Parker, and that he also advised an operation, but only the incision, not the removal, of the cicatrix.

With the patient under the complete influence of ether, and with the assistance of Dr. G. W. Murdock, of Cold Spring, and (as it happened) on the anniversary of the accident, the entire cicatrix was exsected, some bleeding vessels tied, and the edges of the wound accurately brought together with fine silk sutures.

From the very time when the patient recovered consciousness, she felt greatly relieved of the peculiar distress from which she had suffered for so many months; and by the time that the wound had healed, which it did by first intention, and within three or four days, her neuralgic pain and the sense of oppressive weight were entirely gone. Subsequently, during the latter part of the summer and autumn, she sometimes complained of headache, which alarmed her a good deal, though she had been subject to attacks of this kind before the accident. For this, arsenious acid was prescribed, with prompt relief. She has never had any trouble from the traumatic neuralgia from that day to this—nearly four years. But she has had malarious attacks, and then headache, and some pains resembling those for which the operation was performed, and which always excite lively apprehension, but which have always yielded promptly to quinine or arsenic, or both com-

bined. She stated that, on her first visit to the city after her recovery, it seemed, all the while, as she walked the streets, as if she had lost something from her head, which caused her, now and then, involuntarily to put her hand to her head.

When consulted with reference to this case, and especially as to the probability of a permanent cure by means of the proposed operation, the writer, not having met with any similar case, consulted the modern surgical works, and several surgical friends of large experience, and was surprised to find that others seemed to know as little about it as himself; the not uncommon occurrence of painful cicatrices of stumps leading him to infer that superficial cicatrices in other parts of the body, and especially where nerves are so abundantly distributed as on the scalp, would be likely, now and then, to be similarly affected. Scarcely a reference to the subject could be found in any of the more recent treatises on surgery or on affections of the nerves; and an extensive though not exhaustive search as far back as the earliest authentic surgical records, resulted only in finding a few scattered cases and brief references. Two surgeons appear to have had an exceptional experience in these cases. Professor Gross, in a letter just received, says, "I have repeatedly cured neuralgia by the excision of indurated scars, especially of the scalp, after injuries of the head;" yet it is singular, with such an experience, that he should pass over this subject, in the last edition of his great work on surgery, with only the following notice: "Painful scars are very common after amputations, owing to some peculiar change in the terminal portions of the nerves after such operations. Lacerated, contused, punctured, and gunshot wounds are not unfrequently followed by similar effects. The pain, which often assumes a neuralgic character, is liable to serious exacerbations from the most trivial causes, especially exposure to cold, atmospheric vicissitudes, and disorder of the general health; and, from its persistency and obstinacy, may become a source of great suffering and annoyance, rendering life perhaps almost insupportable."*

Professor Parker's experience has already been referred to. He says, in a letter to the writer, of recent date, "I have per-

* System of Surgery, S. D. Gross, 5th edition, vol. i. p. 351

formed the operation (incision) a number of times, many of the patients being clinical [presenting themselves at his clinique.—L.], and in all cases which have remained under my observation, improvement, if not permanent cure, was the result." He also states that he got the idea of the operation from Gibson's Surgery, where it speaks of the French surgeon, Pouteau, as having performed it. Pouteau's cases will be referred to further on. Professor Parker's plan is to make a free incision to the bone, and let it granulate slowly. Thus we see that two, who may be considered representatives of American surgery, differ as to the operative procedure. My friend, Professor H. B. Sands, says, "I can not recall a single instance in which the healing of a superficial wound has been followed by neuralgia. I think such an occurrence must be exceedingly rare." Dr. Weir Mitchell, in his extensive experience in injuries of the nerves, with the records of the late war at his command, mentions no similar case in his remarkable work on "Injuries of Nerves," and has recently informed the writer that he has never met with such a case, and with very few, in which neuralgia has followed even deep cicatrices. Professor Hammond's experience appears to be similar. Such being the case, it may not be uninteresting or uninstructive briefly to allude to some of the histories recorded by the earlier writers, who appear to have paid more attention to these cases than those of later times, especially as they are introduced, not merely as pathological curiosities, but as bearing a practical relation to the observations and references to be presently offered for the consideration of the Association. A disease, which so distinguished an author as Professor Gross has found to be not uncommon, and which he describes as "rendering life perhaps almost insupportable," deserves more consideration than it has yet received from ancient or modern writers.

Gibson records, in his Surgery, p. 374, "In the case of Prince Charles, son of Philip II., King of Spain, who suffered immensely from a neuralgic affection of the scalp, succeeding a wound, Vesalius, by dividing the integument to the bone, effected a perfect cure in a short time. Pouteau," he says, "details two very interesting cases of the same kind, and, by

pursuing a similar practice, was equally successful." Pouteau also cured a neuralgia of several years' standing, caused by a cicatrix over the tibia, by a crucial incision.

In the surgical volume of the *Medical and Surgical History of the Rebellion*, ten cases of gunshot contusion of the cranial bones are alluded to, in which persistence of pain either in cicatrices or distinct spots of the cranium, constituted the prominent symptom. "Three of these belong to the class of cases described by Quesnay (Mémoires de l'Académie Royal de Chirurg., Paris, 1819, t. I. p. 169). "All these patients," says the reporter, "were spared the incisions of the scalp, or the application of the rougine or the trephine, and five recovered and went on duty, while five were discharged for disability, two of whom were subsequently pensioned." An acquaintance with the history of this class of cases, and the almost uniform good results which have followed the simple and safe operation of either incision or excision, would probably have led to much better success than is here reported. "As a consequence of a blow on the inferior part of the orbit, a woman was attacked with an abscess, after which, violent pains recurred almost constantly, radiating all over the face and the antero-lateral and superior parts of the head. Marechal divided the infra-orbital nerve, and at once the patient was free from pain. The wounds healed, however, and the pains reappeared. The nerve was then destroyed by caustics, and the patient seemed cured. Ten months after, there were new attacks. The cicatrix was then opened and kept suppurating, and the cure was definitive."*

Downing, in his work on neuralgia, the Jacksonian Prize Essay for 1852, relates a few cases of painful cicatrix, but not of the scalp. He quotes also the following observations of Dr. Bright, in his work on neuralgia: "We find cases which lead us to believe that tic douloureux sometimes originates in the affections of the extremities of the nerves, and may be derived from wounds of fleshy parts, and cured by application to the cicatrices." Dr. Bright also records the case of a young girl, who had received a cut over the parietal bone, long in healing, and leaving a scar always tender. Years after, neuralgia of

* Annales de Chirurgie, 1844, vol. iv. p. 69.

the temple set in, which did not yield to a variety of remedies. He does not mention any operation. "Dr. Mott dissected out a cicatrix, where irritation proceeded from it, with success." (Mayo, p. 136.)

Mr. Hancock speaks of painful cicatrices of the scalp, and recommends, when they are adherent to the bone, the subcutaneous division of the connections. This he has found more successful in painful stumps than excision of the cicatrix; it having succeeded in one case where the latter operation was twice practiced unsuccessfully. The operation, however, must be followed by systematic sliding of the parts over the bone, until all danger of recurrence of the adhesion has ceased. He attributes the neuralgia to the compression of the nerves against the bone. The cause, however, is still unexplained.

It is difficult to account for the excessive pain which sometimes attaches to these cicatrices, as it is for that which sometimes attends some cicatrices of stumps, many, which are quite painless, exhibiting precisely the same condition as those which cause so much suffering as to necessitate re-amputation. As Paget remarks, it is not the bulbous extremity of the nerve. But it is scarcely more difficult to explain than the local nerve lesion which causes tetanus, or that only one out of a hundred or more apparently similar wounds should be followed by that neurosis. There seems to be some analogy between these superficial cicatrices, which we are considering, and the "painful, subcutaneous tumor," which, though so acutely sensitive, has no connection yet discovered with a nerve. Like cicatrices, these remain for a long time painless, then rather suddenly give rise to severe neuralgic suffering. When removed, the pain sometimes persists, at all events, for a long time. Mr. Paget concludes his consideration of these singular tumors with the following remarks, which are probably quite applicable to cicatrices: "Without entering further on their history, I would suggest that the account of all these painful tumors makes it probable that the pain which the patients feel is, in a great measure, neuralgic or subjective; that it has the tumor, indeed, for an exciting cause; but that it owns, besides, some morbid condition inherent or cumulative in the nerves themselves, so that at times they respond

with a morbid exaggeration, to an habitual or slightly increased stimulus. And if this be true of the most painful tumors, it is probably true in various degrees of others."* We may draw this practical conclusion from Mr. Paget's reflections, and from what we know of the persistence of neuralgia of stumps, and of the head, after amputation on the one hand, and the excision of large portions of nerve-trunks on the other, that the less time wasted in general treatment or local applications, in such cases, and the sooner we resor to the radical operation, the better the chance of a permanent cure. If, however, the pain persists after the *operation*, these measures may be resorted to, with more hope of success, to subdue what Mr. Paget styles "that morbid state of nerve-force which we call neuralgic." An inflammation or some other organic change spreads along the nerves, from the source of irritation, or perhaps, as some have suggested, and Mr. Paget himself supposes possible, only a functional disturbance becomes by persistence a confirmed habit, that may not be subdued even by removal of the causes.

Surgeons appear to be about equally divided as to *incision* or *excision*, and both appear to have been very successful. But it would, *à priori*, appear more scientific and suitable to excise and unite the edges carefully, than to incise and leave to granulate, since the latter process is analogous to that which led to the difficulty; there being a chance apparently that, during the new process of cicatrization, the same accident may recur as in stumps, the involving of the nerve, in some morbid manner, in the scar. Besides, *cæteris paribus*, the wound heals much sooner.

These cicatrices of the scalp may produce other and even more serious disorders than neuralgia. Among these is *amaurosis*. The attention of the writer was called to this fact by a remarkable case, which occurred in his practice while serving as resident surgeon of the New-York Hospital, in 1850. The case was briefly this. A wound was inflicted by the explosion of a copper cap on the 4th of July, on the forehead, near the edge of the orbit, a little to the *left* of the median line. The patient, a girl eleven years of age, was brought to the hospital two days

* Surgical Pathology. Phila. ed. 1854.

after. She had, in the *right* eye, only a perception of light, no vision. The sight of the left eye was good.* An incision was made, a fragment of copper cap found firmly imbedded in the pericranium, and removed. Immediately, with the left eye closed, she could count my fingers held before her. This led to an investigation of the subject, and several unequivocal cases of a similar character were discovered. The histories of these, with that of the case just alluded to, were published in the Am. Jour. of the Med. Sci. for July, 1862. The more recent writers on diseases of the eye do not even allude to such cases. Dr. H. Knapp, during a discussion before the Pathological Society of New-York, and in answer to a query of the writer, stated that he had never met with a similar case. Earlier writers, as Lawrence, Middemore, Sichel, Tyrrell, W. Jones, Walton, Mackenzie, were cognizant of such cases, but attribute the impaired vision to other causes than irritation of the branches of the fifth pair. The writer deems the subject of sufficient importance to warrant him in reproducing here some of his cases and remarks, in an abbreviated form.

Mackenzie, though he relates several cases very plainly indicating the injury of the terminal branches of the fifth pair, as the direct cause of the amaurosis, yet concludes his remarks thus: "The consideration of these facts naturally leads us to regard, with still greater doubt, the alleged occurrence of purely sympathetic amaurosis from slight injuries of the fifth pair, and to suspect that, in supposed cases of this sort, there has been, in addition to the external injury, either concussion of the eyeball, or disease excited within the cranium." This could scarcely have happened in the writer's own case. This question was introduced in an important suit between the London and N. W. Railway Co. and a watchmaker, who had received a very trivial injury of the brow, followed by amaurosis. Mr. Walton testified that, in his opinion, "mere injury of the nerve-branch, on the head, can have no effect

* "An injury on one side of the body may even produce a neuralgia on the other side. A girl had neuralgia of the left temple and side of the head caused by a severe cut over the right parietal bone. A blister over the cicatrix relieved the neuralgia for some time." Paper by Brown-Séquard on Neuralgia, in Holmes's Surgery, vol. iii.

on the function of the retina; that loss of sight, when associated with such lesion, is due to coincident lesion of the eyeball." That there could not possibly have been any such injury in several of the cases related by the writer in the article from which he is now quoting, is certain. The case furnished the writer by the late J. Kearney Rodgers, one of the most eminent surgeons of this country, and an authority on the eye, in his day, was one of this sort. One of the late W. C. Wallace's cases also, in which vision was restored by dissecting out a cicatrix containing a piece of steel: in this case there were also neuralgic symptoms, which were relieved by the operation. "When defective vision follows a wound of the forehead," says the late Mr. Guthrie, "the only hope of relief which we are at present acquainted with lies in a free incision down to the bone, in the direction of the original wound." He says further on, every case failed. (Holmes's Surgery.)

These facts did not escape the observation of Hippocrates. Beer also says, "He has had frequent opportunities for accurately observing and curing *amblyopia* and *amaurosis*, occurring in consequence of wounds of the eyebrow." He also makes the important remark, bearing on the question as to whether, in neuralgia or amaurosis, the proper course is excision, or incision with subsequent granulation, that, "where such wounds are judiciously managed and speedily healed by adhesion, no bad consequence ensues; but when suppuration occurs, followed by the granulating process necessary for secondary union, the divided nerves are involved in the inflammation, and subsequently included in the hard cicatrix, and, as he conceives, compressed and irritated."* Larrey seems to have had the same idea; for he says, "In incisions about the orbit, we should avoid, as far as possible, injury of the ramifications of the frontal nerve; or, if we injure it, we should be careful to make a complete section."

Middemore relates a case in which "a man received a wound just above the right eyebrow from a piece of glass, which was removed immediately after the accident. When the wound had healed, the right eye was very nearly lost; he had a painful sensation in the neighborhood of the cicatrix,

* Laurence, Am. edit. 1854, p. 124.

and a singular sense of creeping and pinching and quivering of the upper eyelid and the integuments of the forehead. I made a free incision of the cicatrix down to the bone, and all uneasiness at once ceased, and the eye, shortly after, assumed its healthy character and functions, and *vision was permanently restored.*" Scarpa, Valsalva, Hey, Larrey, and Vicq-d'Azye allude to similar cases. Hennen* says, "I have met with one or two cases of amaurosis from wounds of the supra-orbital nerve." The writer has quoted numbers of cases of amaurosis caused by injuries or diseases of the teeth, and cured by a removal of the source of irritation. (Op. cit.) Morgagni, Notta, Duval, Tavignot, and others, says M. Echeverria, "have known amaurosis to be caused by neuralgia, and to disappear *as soon as* the neuralgia was cured." For those who may still doubt the reflex origin of the visual disturbance in these cases, the writer would call attention to the following remarkable case. "A woman, aged 48, pricked the forefinger of the right hand with a thorn. At first, swelling and redness, extending over the wounded finger, and partly over the middle finger; but, after three months, the swelling went off, except that over the first two phalanges of the wounded finger. Nine months after the accident, the finger was exceedingly painful to the touch, although there was only a bright red spot on the skin at that point. Two or three times a day, there were attacks, during which the pain extended along the fingers, up the back of the arm and the neck to the head, producing a sensation at the roots of the hairs as if they had become erect. To these feelings succeeded a dimness of sight, and the pain afterward went suddenly into the stomach, followed by sickness and vomiting." . . . "The finger was amputated at the second joint. No sooner had she got into bed, after the operation, than the sensation of a lump in the stomach, and the sickness, immediately subsided, and, in half an hour after, she said she felt, for the first time, as well as before the accident. Her general health improved, and she never had the smallest return of any of the nervous symptoms."†

This subject is not one of mere theoretical interest. It has,

* Principles of Mil. Surg. 2d Edin. edit. p. 346.

† Am. Jour. Med. Sci. Oct. 1854, p. 423.

as we have seen, a medico-legal bearing. But it has a more important practical connection with the management of some obscure cases of asthenopia, in which a knowledge of the above facts should lead the surgeon to institute a careful inquiry as to previous slight injury of the scalp, and a searching investigation as to the possible existence of some such insignificant cicatrix, hidden by the hair, which produced such serious disturbance in Dr. Rodgers's case, and which the acuteness and skill of that surgeon enabled him to relieve by a trifling operation. More than this; these pathological facts point to a method of treatment for impaired vision which may be unconnected with any wound. Admitting that the function of the eye can be so seriously compromised by injury of the branches of the fifth pair, one would naturally infer that defective vision from other causes might be improved by direct applications to these nerves. Accordingly, soon after the occurrence of his own case, the writer was led to employ induced electricity to the supra and infra-orbital branches of the fifth pair for partial amaurosis, in a patient who happened to be in the hospital at the same time. Immediately after each application, he could see more clearly, by actual test, and eventually improved so as to be able to read large type. Dr. I. Hays, surgeon to Will's Hospital, Philadelphia, in 1839, used galvanism with success in similar cases. In two cases, the trouble followed injury of the brow or forehead. He remarks, "The remedy which was most successful in this case was unquestionably galvanism. We have an evidence of this not only in the improvement which followed its application, but in the still more striking fact that the patient actually *saw better while subjected to the galvanic action.*" The reality of this was put to a thorough test both by himself and Dr. John Neill. He further remarks that "We tried *electro-magnetism* in several instances in the hospital during our service in 1839, and also in private practice in a number of cases, but we are not sensible of its having been productive of the slightest benefit in a single instance." In the writer's case it was electro-magnetism which succeeded. But Dr. Hays speaks of the "violent shocks" produced by interrupted currents, as contrasted with "a regular and constant galvanic current." This probably

explains his ill success with the induced currents, and the failures which are every day experienced. Unless in cases of paralysis or poisoning, there should never be *shocks* of any kind, however mild, especially in applications to the head. With the old batteries, such shocks were not generally avoidable; but with the perfect instruments of the present day, especially with Gaiffe's, the current may be as mild and uniform as that of a galvanic battery, and a necessity for a resort to the latter less frequent than is generally supposed. Dr. Addinell Hewson, Surgeon to the Pennsylvania Hospital, published, about fifteen years ago, a number of cases of cure of intense photophobia by one or two applications of electricity "around the orbit." He alleged almost invariable success. The success of the free application of tinct. iodine to the forehead in these cases, is probably referable rather to stimulation of the branches of the fifth pair than to counter-irritation in the sense usually attached to it.

There is good reason to infer, from cases scattered here and there in works on surgery, and from the remarks of surgeons on the consequences of injuries of the head, that *epilepsy* not unfrequently results from cicatrices of the scalp. Hence the importance of bearing this in mind, in the treatment of this disease, and of instituting the most careful inquiries as to trivial and perhaps long-forgotten accidents to the head, and the most careful search for cicatrices or tender spots, just as we look for tender spots over the spine in any fault of innervation, or troublesome neuralgic symptoms in the lower parts of the body. In fact, Gross enumerates, in the first edition of his work on surgery, epilepsy as one of the secondary effects of injury of the scalp. Velpeau states, in his "New Elements of Operative Surgery," that Mr. R. Smith, of the Bristol Infirmary, had been in the habit of employing long and deep incisions of the scalp, "whether there be or be not symptoms of depression;" and that Dr. George Wallis, of Bristol, taking the hint from Dr. Smith's practice, had employed this treatment, in "a variety of cases of organic affection of the brain." Several other distinguished physicians are mentioned by Velpeau as having found this practice of great utility. Dr. Blackmore employed it in hemiplegia, mania, etc., "especially when there has been

'a *fixed pain* in *the head*,' or a tender portion of the scalp, so that gentle percussion has produced great pain." He states that the treatment was suggested by Dr. Abercrombie, who had himself used it with great success. It is not singular that, in those days, all these physicians should have attributed the success of the procedure to the very considerable bleeding following the incisions, and the subsequent suppuration, especially to the former. But, in the light of our advanced neuro-pathology, notably as regards epilepsy, we must regard the hemorrhage as hindering rather than expediting the cure, and refer the latter to a reflex influence on the encephalon. Cullen thought that epilepsy might arise "from an affection of the extremities or other parts of a nerve acted upon by some irritating matter, and following the course of such nerve." "Several authors," says Cooke (Treatise on Nervous Diseases), "mention cases, in which the *aura epileptica* appeared clearly to arise from a distinct local cause. (Fonetus, Fernelius, Haller, etc.)"

Prof. William A. Hammond, who has had an exceptionally large experience in trephining for epilepsy, having lately performed his twenty-second operation, most of them within the last few years, says, in a recent letter to the writer, "I find I have trephined five times for epilepsy without finding *spiculæ* or depression. Of these, two had no more attacks. One, a young man from Georgia, I heard from only yesterday. He has remained free since last July, when I performed the operation over the seat of a severe blow on the head. The other was a lady of this city, who was struck on the head; epilepsy supervened a year after, and I trephined two years after the accident. There was no fracture. The lady had but one fit after, and is well to this day." The writer assisted Dr. Hammond in his last operation, on a boy in whom the fits recurred several times daily; had one while we were preparing for the operation. There was a very obvious cicatrix of the scalp, but, upon removing a considerable portion of the skull, the depression was found to be very slight, and distributed over quite a considerable space. The boy had but one or two fits after.

Prof. W. Parker informs the writer, in a letter just received, that, "in several cases of epileptiform seizure, following a blow on the head, he has found much benefit to result from a

free incision over the point of injury, kept open by issue-peas." Those who are familiar with the extraordinary phenomena, sometimes resulting from reflex nervous action in various parts of the body, both in the production and cure of disease, can readily comprehend the *rationale* of this operation.

APPENDIX.

During the session of the Association, and before the reading of the above paper, the writer met with another tolerably well-marked case of neurosis, arising apparently from a cicatrix of the scalp.

The gentleman is at present the patient of my friend, Dr. R. F. Weir, of this city, for an aural affection. He has not been called upon to investigate or prescribe for his other ailments. We examined him together last evening with reference to his neurotic troubles, and, with some difficulty, owing to his incoherent and disconnected manner of answering questions and relating his history, we made out the following account.

In March, 1862, in consequence of a railway accident, his head was thrown violently against the corner of a car, which caused a scalp-wound of small extent, about in the same location as that of Miss M. M. During the following summer, he had neuralgia of the left side of the head, that corresponding to the cicatrix, which so increased as almost to set him crazy, as he expresses it; sometimes causing the forehead and temple on that side to become swollen to a considerable degree. He continued to suffer more or less in this manner until about three years after, when, after a more than usually severe attack, and several sleepless nights, Prof. A. C. Post was called in, and, as the patient states, wished to incise the cicatrix, which he discovered at the site of the wound. But he finally got relief by means of hypodermic injections of morphia. Subsequently, some unpleasant cerebral symptoms set in, and he gave up business, and travelled, visiting, during several years, Europe, China, Japan, etc. About three years ago, while in China, he says he was sun-struck, and that after his recovery his cerebral symptoms increased. He then visited

Paris, and saw B. Séquard, and other physicians there. As combing or brushing the hair over the cicatrix produced irritation, this physician advised him to part his hair in the middle, which he has since done. Other physicians in Europe subsequently saw him, and as a general rule, prescribed the bromide of potassium. He does not now appear to suffer much from pain, though the latter has extended, in a mild degree, down the neck to the left shoulder. But he says there is always a sense of stricture in the cicatrix, which feels to him "as if bound down, and as if something ought to be cut to liberate it." There is a "numb" feeling, but no pain on pressure. He formerly drank hard, though he says not to intoxication, but that, of late, he can take no stimulant without seriously aggravating his cerebral symptoms.

At a meeting of the Dutchess County Medical Society, in Fishkill, a few days subsequent to the reading of this paper, Dr. W. G. Stevenson, of Poughkeepsie, related the following very interesting and instructive case.

W. P., aged about 30, of good habits, and good general health, was a member of Company G, 123d Regiment, New-York State Volunteers, and received a shell-wound on the right parietal bone; the fragment of shell "scooping" out the scalp and a thin portion of bone, to the extent of two and a half inches. This was followed by serious disturbance of his general health, and especially of his nervous system, and eventually by attacks of epileptic convulsions. He came under my observation about a year and a half after the receipt of the injury, during which time the fits had increased in frequency and severity. Had from four to six each week, and t ey had already impaired the use of the left arm and hand, and also his mind. The *aura* was distinctly felt, beginning in the fingers of left hand; and, if hot brandy or brandy and pepper was immediately taken, on the first sensation of the aura, the attack would frequently be prevented. He had been under the care of different physicians, who had prescribed various remedies without benefit. The counsel of my father, Dr. William Stevenson, and myself persuaded him to permit the operation of trephining, which I performed in August, 1865.

Making a circular incision sufficiently large to include the entire cicatrix, I trephined the skull at the point of injury. There was no evidence of *thickening of bone or membranes, and no depression;* in short, nothing was discovered which would account for convulsions; and yet, for eighteen months after the operation, there had been no return of the epileptic attacks; and a gradual improvement had taken place in the left arm and hand, and also in his mental condition. I have no information relative to his condition beyond the eighteen months after trephining, but this at least is very evident, that the operation produced great benefit for one year and a half.

The fact mentioned by Dr. Stevenson, that a prompt and powerful stimulant would arrest the attack, is worthy of note. Nitrite of amyl would be still more efficient; has been. In the discussion which followed the recital of this case, and as an illustrative explanation of a certain point regarding reflex action, upon which Dr. Stevenson requested information, the writer alluded to a phenomenon, which twice occurred during the treatment of a case now under his charge. He first saw the case in New-York, with Drs. De Wolf and H. B. Sands, during the session of the Association. They stated that, while injecting an empyemic cavity, upon which Dr. Sands had previously cut down, and which injection had been done a number of times before, the patient suddenly fell in an epileptic convulsion, and did not recover consciousness for twenty-four hours. On another occasion, during a subsequent injection, a similar but less severe attack occurred. Dr. Sands attributed it to a rather forcible pressure of the column of water, in order more effectually to cleanse the bottom of the cavity. The patient had never had a similar attack, and through care in using the syringe, has had none since.

Dr. Hosea Fountain, a delegate to the Society from Westchester, alluded to a very similar case, as regards the reflex phenomenon. He was kind enough to furnish the writer with the following notes:

The patient, a rather slender youth of fifteen years, has been afflicted with epilepsy for some few years; the attacks occurring two or three times a week, with a disposition to more frequent occurrence. Some time before having had any

sign of the disease, he fell on a pointed stick, which penetrated deeply in the side, about midway between the last rib and the crista ilii. After the wound had been healed some time, the epilepsy appeared. He was fully impressed with the idea that the wound was the cause of his fits: whether from a tender cicatrix, or an *aura*, I do not remember. On examining the site of the wound, a large puckered cicatrix was discovered, which was tender to the touch. Thinking that a piece of wood still remained in the tissue beneath, an exploring incision was proposed. The incision was carried nearly through the thickness of the abdominal wall, and only a few small grains of softened wood found; not enough, it was inferred, to account for the great disturbance of the nervous system. The epileptic symptoms disappeared at once. Thinking the operation and loss of blood had the effect to prevent the convulsions, the wound was kept open for some time, with the idea that it might act as an issue or counter-irritant, thus keeping at bay the disease, which was confirmed somewhat, as, after a time, when healed, he had symptoms of recurrence of the epilepsy, slight, however, and not at all frequent. This was always one of the unaccountable cases. I now think it was a clear case of irritable cicatrix; and that, had it been *excised*, it would have been permanently successful.

Dr. Fountain also related the following case:

Mrs. S., aged about 22 or 25 years. Had been married a few years. Had been troubled with an increasing neuralgia. For years had felt it, and was growing worse and worse, until the mother said that, at times, "she would go almost in a fit;" would stiffen and become unconscious. The pain would begin in the back of the head, and would *shoot*, as she expressed it, around both sides. On inquiry, I learned that, before the trouble commenced, she had had a fall on the back of her head, breaking a horn comb, a tooth of which was driven into the integuments, and, the mother was sure, remained in the wound. Remembering the other case, I proposed an explorative incision, which resulted in finding a small bit of horn, smooth and rounded by absorption, evidently not sufficient to produce all this suffering. She recovered at once. I never

could understand why, until you called the attention of the society to the probable cause.

Professor Edward H. Parker, of Poughkeepsie, also alluded to a case of epilepsy possibly caused by cicatrix, upon which he was called to perform a *post-mortem* examination. The case had been under the charge, at different periods, of Drs. Van Duser, of Wappinger's Falls, and Dr. I. C. C. Downing, now of Dobb's Ferry. To the latter I am indebted for the following particulars, which I condense from his very interesting letter.

J. B., aged 36. Had led a dissipated life. No history of syphilis. Was wounded in 1863. Leg shot off and almost simultaneously struck by a musket-ball in the head. The gash or furrow in scalp healed well. Began in July, 1872, to have increasingly severe and frequent epileptiform attacks. I first saw him in October, during an attack, a typical one, of epilepsy. There has been evident failure of the intellectual faculties. During several months of treatment, I exhausted all the usual anti-epileptic remedies without the least effect. For a long time the attacks occurred only during sleep, but they subsequently occurred in the day. He suddenly expired July 10th, 1874, during a fit, from spasm of the glottis; was interred July 12th. I was telegraphed on the 15th to make an autopsy, but being unable to respond, Drs. Parker and Stevenson examined the head; but it was, of course, unsatisfactory as regarded the condition of the brain, which was disorganized. There was only a trace externally of the injury of the scalp. It must have healed with little or no suppuration. No injury of skull. Although much of the trouble might have been attributable to bad location, business difficulties, tobacco, etc. etc., yet I felt justified in furnishing such a certificate as would lead to the inference that the injuries, received in the line of duty, caused the disease, and I have understood that a pension was granted his widow. I did attribute the peripheral irritation in this case more to the leg than scalp, and could see no clear indication to interfere surgically. Neither pressure nor manipulation of the stump or the scalp-wound elicited any symptom, which, in my judgment, would warrant a recourse to the knife.

The above is by no means a clear case of reflex epilepsy. But, taken in connection with the preceding histories, and noting the utter failure of remedies, which almost always produce at least a temporary and palliative influence on idiopathic or centric epilepsy, it is possible, at least, that the excision of the cicatrix, which existed, slight though it was, might have been of more service than all the other means so generously employed.

It would appear, from the facts contained in this appendix, so many instances of this supposed rare occurrence having presented themselves among a collection of only forty, mostly country practitioners, that its rarity is only *apparent*, and that it has been overlooked or unappreciated by the mass of the profession.